Flexible Bladder Tank

Unirub Techno India Pvt. Ltd. is a renowned supplier of rubber-coated fabrics and inflatables. We provide bladder tanks designed for a variety of applications, including but not limited to the following:

1. ***Flexible bladder for a foam-filled bladder tank***
2. ***Flexible bladder for a Surge tank***

Fig. Flexible bladder Tank

Flexible bladder for a foam-filled bladder tank

A foam-filled bladder tank is a type of firefighting equipment used to store and dispense fire-suppressing foam concentrate in emergencies. Here are some key points about foam-filled bladder tanks:

Bladder Tank Design: Foam-filled bladder tanks consist of a cylindrical or rectangular tank that is usually made of stainless steel. Inside the tank, there is a flexible bladder made of Buna-N rubber or similar material. This bladder separates the foam concentrate from the water in the tank.

Foam Concentrate: The bladder tank stores a specific type of foam concentrate, such as AFFF (Aqueous Film-Forming Foam) or AR-AFFF (Alcohol-Resistant Aqueous Film-Forming Foam). These foams are used to suppress various types of fires, including those involving flammable liquids and hydrocarbons.

Water Inlet: The bladder tank is connected to a water supply, and water is typically kept in the space between the tank and the bladder. This water acts as a cushion to provide pressure to push the foam concentrate out of the bladder.

Bladder Function: The bladder within the tank holds the foam concentrate until it's needed. When a fire breaks out and the system is activated, the water pressure forces the bladder to collapse, which in turn pushes the foam concentrate out into the firefighting system.

Activation: Foam-filled bladder tanks are usually linked to a fire suppression system, such as a deluge system or a sprinkler system. When a fire is detected, the control system releases the foam concentrate, which is then mixed with the water and dispensed through nozzles to suppress the fire.

Application: Foam-filled bladder tanks are commonly used in industrial settings, such as chemical plants, fuel storage facilities, airports, and warehouses, where there is a higher risk of fires involving flammable liquids or hydrocarbons.

Flexible bladder for a Surge tank

Fig. Surge Tank

A surge tank, also known as a surge vessel or surge drum, is a device used in various industries to control and manage pressure fluctuations and surges within a fluid system. Here are some key points about surge tanks/Flexible bladder:

Tank Design: A surge tank typically consists of a flexible bladder or membrane that is enclosed within a rigid shell. The bladder is made from durable Rubber coated fabric and it separates the liquid (or gas) within the tank from the external atmosphere. The rigid shell provides structural support and protection to the bladder.

Bladder Function: A flexible bladder inside the surge tank is used to absorb and mitigate pressure variations, often caused by sudden changes in fluid flow or system dynamics. By doing so, it helps to maintain a more stable and consistent pressure in the system.

Applications: Water Distribution, Oil and Gas Industry & Industrial Processes.

Benefits: Prevents Water Hammer, which can lead to pipe damage and leaks.

Flexible Bladder Tank

Unirub flexible Bladder tanks are custom-engineered to suit the fluid pressure and the properties of the surrounding fluid media. Typically, these flexible tanks are Manufactured from a robust polyamide fabric coated with high-strength Nitrile (Buna-N), Butyl, Neoprene and Hypalon rubber. The flexible bladder can be tailored to align with the specific vessel design provided by the customer.
Our range of flexible tanks is available in the following size options:

Parameter	Range
Capacity (Litres)	200 - 15000 or as per customer requirement
Diameter (MM)	500 - 2000 or as per customer requirement
Total length(MM)	1000 -10000 or as per customer requirement
Flange	ANSI B16.5 CLASS 150 or as per customer requirement
Number of Flanges	2 / 4 or as per customer requirement

Our tank is Manufactured using the following rubber-coated fabric, and you can find typical values listed below.

Sr. No.	Test parameter	Unit	Test Method	Specification
Coated Fabric Specifications				
1	GSM	-	ASTM D 5261	1500 ± 150
2	a) Breaking Strength - Warp (Min)	Kg/ 50 mm	ASTM D 751	300
	b) Breaking Strength - Weft (Min)	Kg/ 50 mm		
3	a) Elongation at Break - Warp	%	ASTM D 751	Warp : 24.6 ±6
	b) Elongation at Break - Weft	%		Weft : 26.6 ±6
4	Peel Strength (Min)	kg / 50 mm	ASTM D 413	5
5	Air leak proofness	-	ISO 15372	No Leakage

Note :The fabric specifications are subject to customization according to the customer's needs.

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